MINNESOTA WING HEADQUARTERS
CIVIL AIR PATROL
United States Air Force Auxiliary
PO Box 11230
St. Paul MN 55111-0230

9 March, 2002

MEMORANDUM FOR HQ CAP/DO

FROM: Minnesota Wing/CC

SUBJECT: Radiological Monitoring Training and Operations Plan

Attached you will find the Minnesota Wing Training and Operations Plan for Ground Radiological Monitoring. It is submitted to you IAW the requirements of CAPR 60-3 paragraphs 1-28.d. and 2-3.z. Please review this document and inform us whether you approve.

I can receive your reply by email (dale.hoium@mnwg.cap.gov) or by FAX at 651-388-1554.

We are in the midst of arranging training events with the state related to this plan. If you would be able to act on this and approve it quickly, it would be very much appreciated.

The Minnesota Wing Director of Emergency Services, Maj. Stan Kegel, is available to answer any questions or accept any feedback you may have. He can be reached by his pager at 612-539-9604. He can also be reached by email (kegel@mm.com).

Thank you for your attention to this matter.

/SIGNED/
DALE HOIUM, Col, CAP
Commander, Minnesota Wing

APPPROVED / DISAPPROVED

JOHN A. SALVADOR
Director, Operations

Minnesota Wing, CAP

Training and Operations Plan
For Ground Radiological Monitoring

9 March, 2002

Maj. Stanley H. Kegel, Jr.
Minnesota Wing Director of Emergency Services

1Lt Randall W. Terpstra
Minnesota Wing ES State Agency Liaison Officer

Submitted to the Minnesota Wing Commander
For the Approval of NHQ CAP/DO

The purpose of this document is to document training and operations plans for ground radiological monitoring in order to comply with the requirements of CAP Regulation 60-3 paragraphs 1-28.d. and 2-3.z**.**

Contents

SECTION I
Synopsis of Training and Mission Activity (Required per CAPR 60-3)

Detailed Description of the Mission

Minnesota Wing, CAP is undertaking to support the State Government by providing ground radiological monitoring services. The role of CAP radiological monitors will be to screen persons following decontamination procedures at evacuation "reception centers." A reception center would be activated following a major incident at one of the state's two nuclear power plants. Each reception center is located more than 20 miles away from the corresponding power plant. The purpose of the monitoring is to ensure that effective decontamination has been accomplished and that the individuals may safely exit the decontamination area.

Monitoring will be accomplished using hand-held and walk-through radiological monitoring equipment. The monitoring is done at the edge of the decontamination area "hot zone" with the monitoring personnel outside the "hot zone."

See Section IV of this document for additional background information.

What Training will Occur

The total training program has four parts.

1) Radiological Monitor training (classroom & hands-on)
2) Reception Center Orientation
3) Drill reversal
4) FEMA Evaluation - Measured/scored exercise

Individuals who complete all four components will receive the CAPF 101 radiological monitor rating.

The full training program will be made available to CAP senior members and cadets age 18 and over. Only senior members and cadets age 18 and over will be given CAPF 101 cards with radiological monitor ratings.

Cadets under 18 may participate as students in the classroom & hands-on part of the training only. Cadets under 18 may also serve as simulated evacuees for the drill or exercise (at which no live radiological samples will be used whatsoever).

The classroom and hands-on training has three components.

a) Right-to-Know training for radiation – developed by the MN Division of Emergency Management [DEM].
b) The Radiological Emergency Preparedness Program (REP) and Reception Center Operations – developed in partnership with DEM and MN Department of Human Services [DHS].
c) Operation and use of radiation detection equipment (hands-on instruction) – developed by the MN Division of Emergency Management [DEM].

The curriculum is from DEM's The Radiological Emergency Preparedness Handbook. This document can be found at http://www.dps.state.mn.us/emermgt/rep/index.htm.

The hands-on portion of the training will be accomplished without the use of live radioactive materials.

Training records will be maintained by Minnesota Wing Headquarters. FEMA will also receive information on the training given and will evaluate the exercise.

Who will Conduct the Training

The following outside instructors will conduct the training:

- Glenn Olson (DHS), 651-297-8742 glenn.e.olson@state.mn.us
- Jim McClosky (DEM), 651-296-0471 james.mcclosky@state.mn.us
- Rob Roy (Nuclear Management Company), 612-330-7903 Robert.L.Roy@nspco.com

Training of CAP personnel will be conducted under the supervision of a qualified CAP incident commander.

Equipment to be Used

CAP Personnel will be trained in the use of hand-held radiation detection equipment and also walk-through detection equipment.

Currency Requirements

Training will be considered current for two years. Training must be reaccomplished in full after that time in order to achieve continuing currency and in order for the CAPF 101 card radiological monitoring rating to be re-issued.

SECTION II
Risk Analysis (Required Per CAPR 60-3)

CAP Risks Analysis and Mitigation Plan

Risks faced by CAP are in the following categories.

Risk Associated with Training
1. Individual risk to participant during training

Risk Associated with Actual Operational Missions
1. Individual risk to participant during operations
2. Risk to CAP with respect to response to other incidents
3. Legal risk to CAP

Each of these risk areas is addressed below:

Individual Risk to Participant During Training – Risk Rating: LOW

Any Senior Member or Cadet (age 18 and over) that chooses to participate faces certain inherent risk that is present in any training or operation.

During the initial equipment familiarization and training phase, an extremely low-yield beta emitter is used to demonstrate the response of the equipment to the presence of radiation. This is a demonstration conducted by the trainer. It is demonstrated in such a manner so as to minimize ANY exposure to the students.

During hands on training and during the exercise itself, **no radiological material will be utilized**. Trainers or proctors from the agencies scoring the exercise verbally inform the monitors that they have a "hit" and weigh the response and the handling of the evacuee.

Individual Risk to Participant During Operations – Risk Rating: MEDIUM

Working with individuals who are possibly contaminated with radioactive material is inherently a hazardous activity, and we must be conscious of that as we proceed. Several factors, as listed below, mitigate this risk to an acceptable level:

Mitigating Factors:
- Training is conducted under the auspices of credible State and Federal agencies
- Training includes "right to know" information about radiation and self-protective measures; monitors will be able to track their own exposures
- Actual radiological monitoring by CAP personnel will be conducted on individuals that have already completed a decontamination process
- Actual radiological monitoring by CAP personnel will be conducted from outside the decontamination area "hot zone"
- The evacuation reception centers are each located 20 or miles from the nuclear power plants

Risk to CAP Response to Other Incidents – Risk Rating: LOW

In the event of an actual incident, the CAP response to the evacuation center would be for a period of 48 to 72 hours. During that time, there is potential for reduced response to any other incident that would be reported. But given the staffing levels of the organization within the state, it is anticipated that the impact for this short period of time would be minimal.

Legal Risk to CAP (with respect to actual operations) – Risk Rating: MEDIUM/LOW

We believe that the factors mitigating risk of exposure should minimize the likelihood that a CAP member would suffer harm from these operations. If such harm would occur, however, CAP could have a legal exposure.

Mitigation Plan:

The Minnesota Wing legal officer has been briefed on this initiative. He is currently considering whether it would be appropriate to create some form of special signed documentation for trained radiological monitors. Any such documentation would be created in consultation with National HQ, CAP.

Minnesota Wing will evaluate whether any change to the State MOU is appropriate to facilitate this mission. This will be done in consultation between the Wing Commander, Wing Legal Officer, and Director of Emergency Services.

SECTION III
Recap of State MOU and CAPR 60-3 with Respect to this Mission

The MOU between CAP and the State of Minnesota provides for activation procedures for USAF assigned CAP missions in support of a requesting agency. The following three procedures are explained in the MOU:

a) Air and Ground SAR Missions (mission designator issued by AFRCC)
b) Air and Ground DR Missions (mission designator issued by AFNSEP)
c) Other USAF Assigned CAP Missions (non-USAF reimbursable, mission number issued by CAP Minnesota Wing Director of ES)

Procedures (b) or (c) above would potentially apply to ground radiological monitoring missions.

With respect to procedure (b), the MOU provides that AFNSEP mission designators can be assigned for an **Imminently Serious Condition** (i.e. conditions requiring immediate action to save lives, or prevent human suffering) or in **Presidentially Declared** disasters. We expect that it is likely radiological monitoring missions may meet this requirement, and that these missions can be initiated under this procedure.

If AFNSEP is unable to issue a mission designator, the MOU provides that the CAP Wing Director of Emergency Services may issue a wing mission number per procedure (c). Under procedure (c), a specific list of possible missions is listed, but the MOU does not currently include ground radiological monitoring in that list. (This could be amended in a future MOU. In the meantime, it is presumed that the Wing Commander and Wing Director of Emergency Services would have the authority to accept missions, whether or not they are listed explicitly in the MOU.) It should be noted that the MOU does not explicitly specify that the list of possible missions is exhaustive. The only precondition stated in the MOU is that "the requesting agency agrees to reimburse CAP for mission costs...and to assume the identity of employer for workers' compensation purposes."

CAPR 60-3 Para. 1-28.d. lists radiological monitoring as an instance of "technical or specialized operations [that] are considered acceptable and reasonable at present, but still require prior written approval."

CAPR 60-3 Para. 2-3.z. lists the requirements for training and CAP qualification as a Radiological Monitor (Air/Ground). It says the following:

> Wings will conduct a risk assessment and request approval from NHQ CAP/DO prior to training for or becoming qualified in this mission. Requests to participate in this mission will include: a detailed description of the mission, what training will occur, who will conduct the training, equipment to be used, and currency requirements. A training card shall not be issued for this specialty.

The purpose of this documentation is to comply with CAPR 60-3 Para. 1-28.d. and Para 2-3.z.

CAPR 60-3 Para. 7-3.b. specifies that ”CAP participation in peacetime civil disaster or emergency relief operations under Air Force auspices…is authorized pursuant to DoD directive 3025.1…and AFI 10-2701”. AFI-2701 Para. 3.2.3.2. says that CAP “Military Support to Civil Authorities Missions include, but are not limited to, aerial damage assessment (visual, photographic, and video), airborne radiological monitoring, light load airlift including parts, personnel, and package transport. DoDD 3025.1 Para 4.5.4 and 4.5.4.5 indicates “Immediate Response may include DoD assistance to civil agencies in meeting the following types of need: …Monitoring and decontaminating radiological, chemical, and biological effects; controlling contaminated areas; and reporting through national warning and hazard control systems.”

Minnesota Wing believes that this plan is consistent CAPR 60-3 Para. 7-3.b. and with these directives.

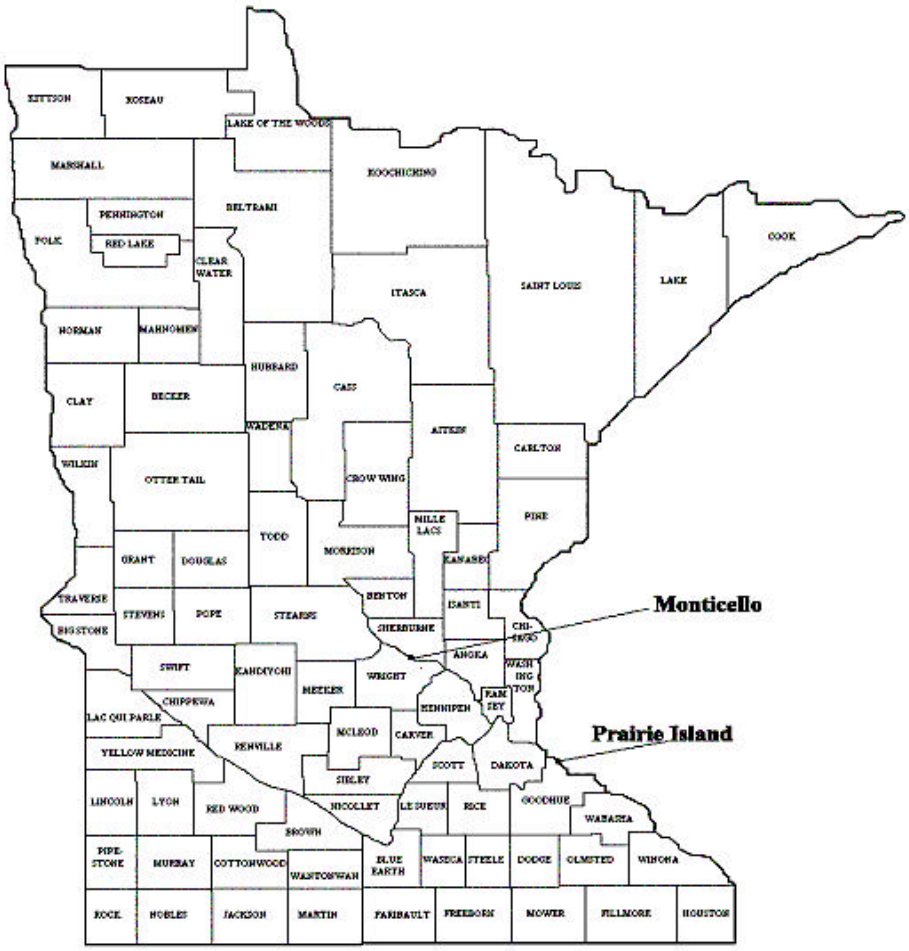
SECTION IV
Background

The main purpose of Radiological Emergency Planning in the State of Minnesota is to ensure that plans, personnel, facilities, and equipment are in place in the event of an emergency at a nuclear power station. Lessons learned from the Three Mile Island Accident, and recent national security events have been incorporated into the current planning.

As part of the license from the Nuclear Regulatory Commission, the independent owners of the nuclear generating plants in Minnesota must have emergency plans in place on how to handle emergencies. Key to these plans is an evacuation plan for residents in the surrounding communities in the event of a radiological incident. Under the oversight of the Federal Emergency Management Agency, state and county governments have developed emergency evacuation plans that coordinate with the plans of nuclear power plants. Evacuation drills and exercises are conducted on an annual basis to test the emergency plans. The evacuation drills alternate each year between the facilities.

Nuclear Power in Minnesota

There are two nuclear power stations in Minnesota. The Monticello plant is located near Monticello has one Boiling Water Reactor. The Prairie Island plants are located near Red Wing and have two Pressurized Water Reactors.



Emergency Response Facilities

Each power plant maintains resident facilities that are dedicated to response, technical support, and communication during a radiological emergency incident. These facilities at the power plants are in constant communication with Emergency Operations Centers (EOCs) at the state and county levels. Each independent facility coordinates it response actions to protect the public.

The State of Minnesota EOC serves several functions. A planning section takes information from the nuclear power plant and field teams that perform sampling to determine the pathway of radioactivity released from the plant. The state EOC also coordinates notifications to the public via the county EOCs through the Emergency Alert System (EAS). Personnel from state agencies report to the state EOC to be a liaison between the EOC and their agency and to aid in any decisions. The state EOC is responsible for making requests to the federal government for assistance. The state EOC also staffs for public information that is given through the Joint Public Information Center, a separate facility.

County EOCs coordinate with the state EOC and the independent nuclear power plants to perform actions needed to ensure public safety. Local police, fire, and other public agencies, such as the Civil Air Patrol, may be called upon. A county EOC may request assistance from the state, which in turn may request Federal assistance.

Emergency Classification Levels (ECLs)

Events and incidents at a nuclear power plant are classified on the severity of the incident. ECLs ensure that the state and counties are notified in a timely manner by the utility.

Class	Description	On-Site Action	Off-Site Action
Unusual Event	Event out side of normal operation – no threat to fuel or off-site releases above technical specifications	Notify NRC, State Duty Officer, and County Dispatcher	Increase Awareness
Alert	Decrease safety Unknown Conditions	Partial Activation Response Assist Control Room	Increase Readiness
Site Area	Major Decrease in Safety One More Failure Results in Core Damage Actual or Possible High Doses On-Site	Full On-site Response Evacuate Non-Essential On-Site Personnel Monitor	EOCs staffed and functional Assess Conditions for Exposure to Public
General	Substantial Risk of Major Release Actual or Projected Core Damage Actual or Projected High Doses Off-Site	Same as Site Area Recommend Protective Actions to Off-Site Officials	Same as Site Area Implement Urgent Protective Actions Notify Appropriate Authorities

Protective Action Recommendations (PARs)

Protective Actions are activities conducted in response to a release or potential release of radioactivity in order to avoid or reduce the radiation exposure to the public. Examples of PARs are evacuate or shelter persons within the Emergency Planning Zone (see next section), sheltering livestock, and monitoring or restricting food supply

If the Emergency Classification Level (ECL) at the plant escalates to a Site Area or General Emergency, one or more protective actions may be issued.

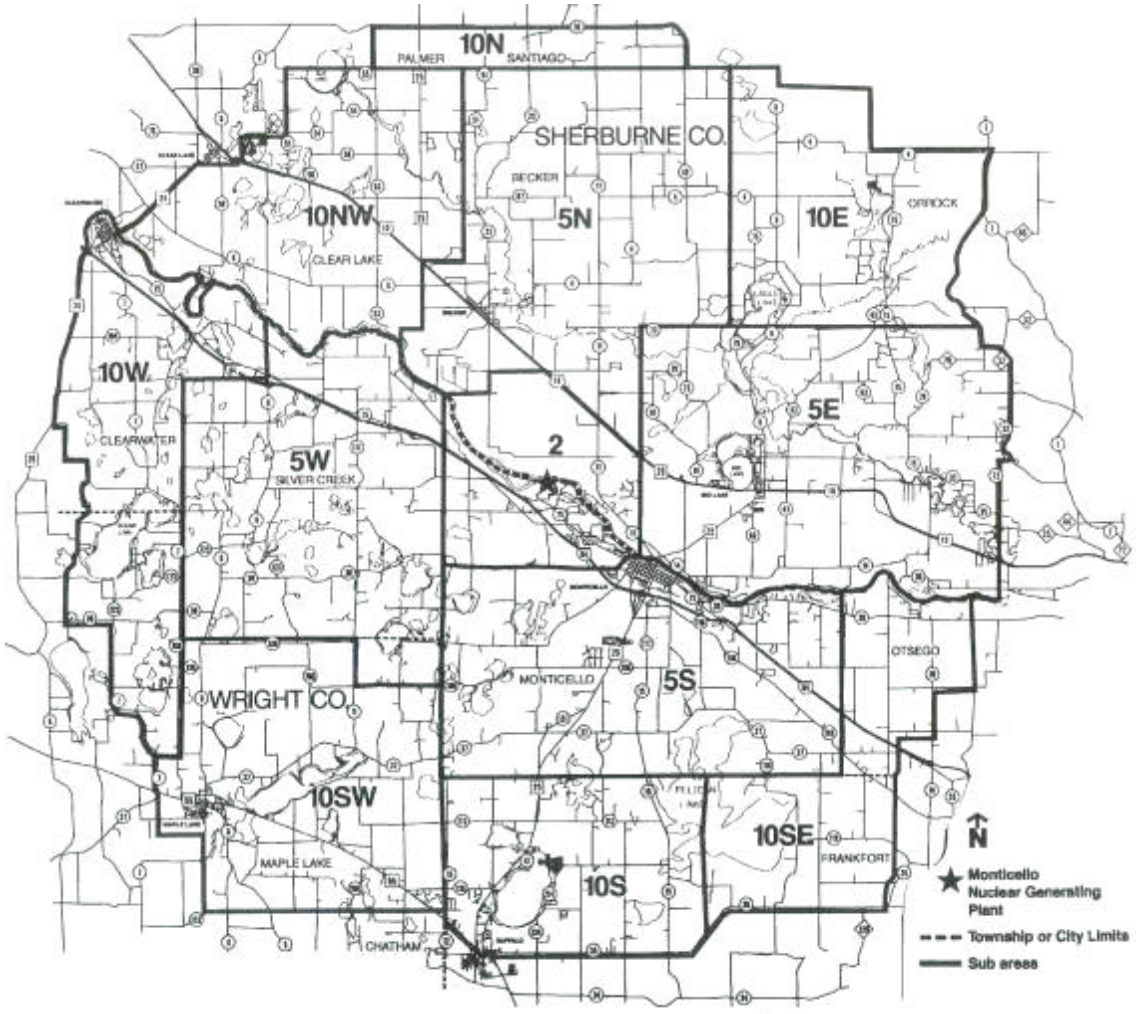
If the event is a Rapidly Escalating Event, a PAR will accompany the first notification from the nuclear power plant. The initial PAR is pre-approved and is for a two-mile perimeter around the power plant and 5 miles downwind of the plant.

The following diagram illustrates how PARs are put into action:

Emergency Planning Zone

Most of the radiation during an emergency at a nuclear power plant probably will come in the form of a plume of radioactivity. The path the plume takes is dependent on wind direction, wind speed, and other meteorological conditions. Plants are equipped with radiation monitors and field teams are deployed in order to predict and track the path of the radioactive plume. Emergency Planning Zones (EPZs) are defined areas around nuclear power plants so that Protective Action Recommendations (PARs) can be made in the areas affected by the radioactive plume.

The Emergency Planning Zone is a 10-mile radius around the plant divided into sub areas. PARs, such as sheltering and evacuation, will be made for the subareas either predicted or affected by the plume. If the wind changes or other meteorological conditions occur, other subareas could be included in the Protective Action Recommendation.



Ingestion Pathway Zone

A radioactive plume from a nuclear power plant may deposit radioactivity on to the water and vegetation in its path. The water and plants may be used as feed for livestock and food for humans. The Ingestion Pathway Zone (IPZ) is an area monitored after the release of radioactivity from a nuclear power plant has stopped. Vegetation, water, milk, and other food are monitored to make sure it falls within safe levels established by the Food and Drug Administration. Also, areas are monitored to make sure they are safe for habitation. The IPZ is fifty (50) miles in diameter.

Government and Utility Roles

In the event that there is a radiological incident at one of the nuclear generating stations there will be many different organizations responding. These will come from federal, state, and local governments as well as the utility. It is in this capacity that Minnesota Wing, Civil Air Patrol is anticipated to be a participant. This section will cover the various roles played by the agencies and organizations responding to a radiological incident.

Federal Radiological Emergency Response Plan

The Federal Radiological Emergency Response Plan (FRERP):

- Provides the federal government's concept of operations based on specific authorities.
- Outlines federal policies and planning considerations on which the concept of operations is based.
- Specifies authorities and responsibilities of each federal agency.

The Lead Federal Agency (LFA) for most radiological incidents at nuclear generating stations is the Nuclear Regulatory Commission (NRC). The NRC reports to the President of the United States and Congress in this situation. The NRC will coordinate any federal assets that the NRC or the State of Minnesota requests. A major department that may provide assistance is the Department of Energy (DOE). The DOE may provide resources in the form of the Federal Radiological Monitoring and Assessment Center (FRMAC). FRMAC provides technical assistance such as field sampling, sample analysis, and plotting of radiological data to assist county, state, and federal agencies in decision making.

State of Minnesota Response

The State of Minnesota provides direction, coordination, and control in accordance with the Minnesota Emergency Operations Plan (MEOP). The State Emergency Operations Center (SEOC) is structured on the Minnesota Incident Management System (MIMS) with facilities for planning, operations, finance, logistics, and public information. The governor or governor's delegate is participates in the SEOC in the command function.

State Activities by ECL

The following lists show, for each emergency classification level (ECL), the activities undertaken by the state government. In red print, the proposed future CAP activation procedures are included. The MOU with the state of Minnesota

Notification of Unusual Event

- Stand-by until verbal close out or escalate to more severe ECL.
- Notify designated officials.
- [Optional] CAP Wing ES State Liaison Officer or CAP Wing Director of Emergency Services is notified.

Alert

- Staff SEOC.
- Dispatch radiological field teams for sampling.
- Notify DOE of incident.
- Evaluate dose projections to the public.
- Develop sampling strategy.
- Maintain alert status until close out or escalate to more severe ECL.
- CAP Director of Emergency Services is notified. (Director of ES informs Minnesota Wing Commander.)

Site Area

- Complete all of the above.
- Notify DOE and request assistance, if needed.
- Recommend sheltering - placing milk animals within two miles of the plant on stored feed, and assess need to extend distance.
- Provide off-site monitoring results to the generating station, counties, and others to assess.
- Continuously assess information from the generating station and off-site monitoring to initiate or change protective actions.
- Maintain site emergency status until closeout, reduction of emergency class, or escalation to a general ECL.
- CAP Director of Emergency Services is notified. (Director of ES informs Minnesota Wing Commander. CAP places squadron radiological response personnel on alert status for possible activation.)

General

- All of the above.
- For actual or projected severe core damage or loss of control to the facility, recommend evacuation for a 2-mile radius around the station and 5 miles downwind, depending on local conditions. Continually assess data from the station and field teams to extend distances or add other areas. Advise the remainder of the population in the plume EPZ to go indoors and listen to the Emergency Alert System (EAS) messages.
- Maintain general status until close out or reduction of ECL.
- AFNSEP and CAP Director of Emergency Services are notified. (Director of ES coordinates with AFNSEP. Either an AFNSEP mission designator is received or the Director of ES issues a Wing mission number. CAP radiological response personnel activated to staff pre-designated evacuation reception centers to assist State Radiological personnel. The Director of ES informs the Wing Operations Chief of Staff and the Wing Commander.)

County Response

If radiological incident were to occur, the counties surrounding the nuclear generating station would also respond with their emergency operations plans. Their main focus is to maximize the protection of lives and property, ensure that government can survive and continue to provide essential services, and support local units of government. By activating their EOCs they will assure that this is accomplished by exchange of information between county departments and where appropriate, to coordinate operations with other counties, state and federal agencies, as well as Indian communities. All county EOCs will be in direct contact with the state EOC and participate in the decision process for all protective actions.

Utility Response

The responsible utility maintains an emergency operations plan that is used if a radiological incident at a nuclear generating station would occur. The station's main responsibility is to find the cause of the radioactive release and stopping it as soon as possible while keeping the station safe from further damage. The utility monitors conditions of the station and determines ECLs that are communicated to the state and counties based on those conditions. The utility makes projections of radiation dose to the public based on plant conditions and makes protective action recommendations. The radiation dose projections and protective action recommendations are sent to the state and counties for review and implementation. The station dispatches monitoring teams to verify the amount of radioactivity that was released. Since the NRC is the Lead Federal Agency, the utility stays in close communication with this agency.

CAP Response

In the event of the activation of one of the two-evacuation/reception centers, CAP personnel would be called upon to assist in the setting up and subsequent operation of the reception centers. These centers, anticipated to be activated for a period of 72 hours, would then be deactivated and personnel freed to respond to additional duties and/or to stand down.

Previous CAP Participation

North Hennepin Squadron, Minnesota Wing, Civil Air Patrol was approached by the Hennepin County Office of Emergency Preparedness in the Spring of 2001 and asked to participate in the establishment of the evacuation reception center at the Osseo Junior High School, in Osseo, Minnesota. This is the evacuation/reception center that would be activated in the event of a radiological event at the Monticello Nuclear Power Facility that resulted in an evacuation of residents.

The opportunity was extended to Senior Members and Cadets age 18 and over to receive training on the setting-up and running of the radiological monitoring equipment at the reception center. The Minnesota State Radiological Officer allowed that cadets under the age of 18 could receive the training but could not be used in the exercise as a monitor.

Three classes were held for CAP personnel, conducted by the State Radiological Officer and the Hennepin County Radiological Officer. An exercise dress rehearsal was held and the actual exercise was conducted.

The exercise received oversight from the Nuclear Regulatory Commission (NRC), the Minnesota Department of Emergency Management (DEM) and the State OSHA board.

At the after-action debriefing, CAP personnel were lauded for their professionalism and attention to duty.